DIGITAL EAR AND FOREHEAD THERMOMETER

Geratherm®

duotemp

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INSTRUCTIONS FOR USE
Geratherm Duotemp GEF-100

CE 0118

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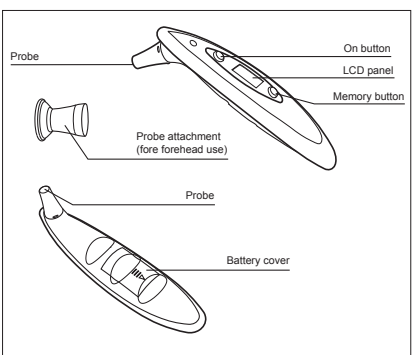
THE PARTS OF THE UNIT



SPECIFICATIONS

Point of measurement	Infra-red measurement at the eardrum or forehead
Measuring range Ear Mode: Forehead Mode:	 0 - 100 °C (32 - 212 °F) 32.2 - 43.3°C (90 - 109.9 °F)
Operating conditions	10 - 40 °C (50 - 104 °F), humidity: 15 - 95 % RH
Storage conditions	-20 - 50 °C (-4 - 122 °F), humidity: 15 - 95 % RH
Resolution	0.1 °C or 0.1 °F
Accuracy (laboratory)	35.5 °C - 42.0 °C: +/- 0.2 °C (95.9 °F - 107.6 °F: +/- 0.4 °F); other ranges +/- 2%
clinical repeatability	max. +/- 0.3 °C
Memory	Stores up to 10 measurements in the memory
Automatic switch-off	60 seconds
Reaction time	- 1 second
Battery	DC 3V lithium battery CR20322
Battery life	More than 12 months if used for 10 minutes per day
Dimensions	150 mm (l) x 36.7 mm (b) x 44 mm (h)
Weight	47 g (including battery)

Quality guarantee:
The unit conforms to the Council Directive 93/42/EEC concerning medical devices and the standard DIN EN 12470-5:2003 Medical Thermometers, Part 5: Standards for Infra-Red Ear Thermometers. Geratherm® is certified in accordance with Council Directive 93/42/EEC, Annex II and DIN EN ISO 13485 and is entitled to affix the CE-mark CE 0118 (Notified Body: LMET).

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- Store out of children's reach! Measurement of children's temperatures must be conducted under adult supervision!

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- If the unit is dropped, false readings may occur.
- The unit is intended for private household use.
- Do not apply a protective cap!
- The probe tip should be cleaned before each use. It can be cleaned by wiping it with a cloth or cotton-wool ball soaked in rubbing alcohol.
- If the lens is dirty, false readings may occur.
- Use of the thermometer is no substitute for medical treatment!
- The unit has an off-set function to compensate for the influence of the ambient temperature.
- When it is switched on, the unit conducts an automatic self-testing procedure. Any faults are shown on the display.

WHAT IS BODY TEMPERATURE?

Body temperature refers to the internal temperature of the body (core temperature). 'Normal' body temperature fluctuates over the course of 24 hours. It tends to be lowest in the early morning and highest in the late afternoon. Body temperature also varies depending on the part of the body where the temperature is measured and also differs with age. Hence, the body temperature measurement obtained depends on when and where the temperature is taken and on who the patient is.

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Normal temperature ranges - by point of measurement 1)	
Axillary	34.7 - 37.3 °C
Oral	35.5 - 37.5 °C
Ear	35.8 - 38.0 °C
Rectal	36.6 - 38.0 °C

Normal temperature ranges - by age 2)	
0 - 2 years	36.4 - 38.0 °C
3 - 10 years	36.1 - 37.8 °C
11 - 65 years	35.9 - 37.6 °C
> 65 years	36.8 - 37.5 °C

1) Chamberlain, J. M. Dr. med., and Temdrup, T. E. Dr. med., "New Light on Ear Thermometer Readings", Contemporary Pediatrics, March 1994.

2) Chamberlain, J. M. Dr. med., and Temdrup, T. E. Dr. med., "Determination of Normal Ear Temperature with an Infrared Emission Detection Thermometer", Annals Emergency Medicine, January 1995

TEMPERATURE MEASUREMENT - EAR

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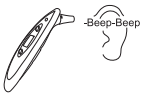
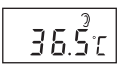
In order to ensure accurate measurement, the patient should first rest for 20 minutes in the same room as the thermometer. Immediately after exercise or a bath, the temperature may be raised.

	Press the ON button [ON].
	Insert the probe into the auditory canal.
 	For the temperature to be measured accurately in the ear, the tip of the probe must be directed towards the eardrum.

	Press the ON button and wait until you hear a beep. If no beep is heard, press and release the ON button again.
	As soon as you hear the beep, remove the probe from the auditory canal. Read the temperature displayed on the LCD panel.

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To switch from forehead mode back to ear mode, press MEM for 2 seconds.

- It is advisable to take the temperature in the same ear, since the values measured in the left and right ear may be different.
- In the case of patients whose auditory canal is curved, the temperature values measured may deviate owing to anatomical influences.
- The ear should not be obstructed, for example by excessive amounts of ear wax.

TEMPERATURE MEASUREMENT - FOREHEAD

In order to ensure accurate measurement, the patient should first rest for 20 minutes in the same room as the thermometer. Immediately after exercise or a bath, the temperature may be raised.

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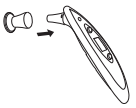
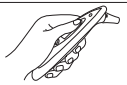
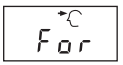
	Always check that the probe attachment is fixed onto the thermometer. Prior to measurement, the forehead should be free of perspiration, make-up, etc.
	Press the ON button [ON].
	Press MEM for 2 seconds, it will switch to Forehead Mode.
	Place the probe tip with the attachment on the patient's forehead. The recommended area is on the left-hand side above the left eyebrow (or on the opposite side if you choose the right eyebrow). Press the ON button (you will hear a beep) and keep it pressed down as you slide the thermometer towards the left, moving it for at least three seconds over the temporal artery. Then remove the thermometer from the point of measurement.

	Read the temperature value displayed on the LCD panel.

Temperatures measured in forehead mode are displayed as comparable rectal temperatures.

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- The precise sensing system records the heat emitted naturally through the skin. If the thermometer is not moved over the temporal artery, the temperature recorded may be lower.
- It is advisable to take the temperature 2 - 3 times and to record the highest value, since the position of the temporal artery varies from person to person.
- In some patients the forehead temperature may differ as a result of environmental factors and it is advisable to take and record your forehead temperature when healthy.
- The measurement of forehead temperature is an excellent point of reference for recognising raised body temperature.
- If you are in any doubt about the temperature measured, please measure it again in the ear and, for the sake of accuracy, record the highest value.

MEASURING WATER AND ROOM TEMPERATURE

- Measurement should be conducted in ear mode only.
- To measure water temperature, keep the probe at least 1cm (± 0.5 cm) above the surface of the water. The greater the distance from the surface of the water, the less accurate the measured values will be.

MEMORY

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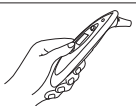
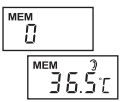
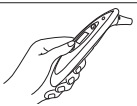
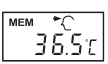
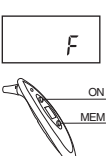
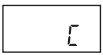
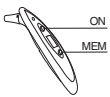
	Press the MEM button.
	The first memory cell number (“0”) will then show the stored temperature (the last reading).
	Press the MEM button again. Now the reading before last will be shown.
	The other values stored in the memory can be viewed by pressing the MEM button again.

CHANGING THE TEMPERATURE SCALE



In order to switch over to Fahrenheit (°F), press the MEM button and then press and release the ON button while the memory cell number is displayed on the LCD panel.





In order to switch over to Celcius (°C), press the MEM button and then press and release the ON button while the memory cell number is displayed on the LCD panel.

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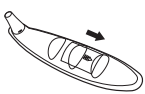
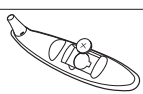
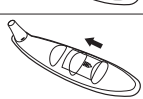
BATTERY REPLACEMENT AND INSERTION

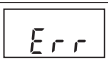
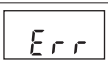
	When the symbol appears on the LCD panel, the battery needs to be replaced.
	Press down on the part of the cover marked and push the cover in the direction of the arrow shown in the illustration. Remove the battery. **Attention: Avoid using any sharp metal object in this operation.**
	Insert a new CR2032 lithium battery, taking care to match the polarities (+) as indicated.
	Replace the battery cover by pushing it in the direction indicated by the arrow in the illustration.

If no signal is received after changing the battery, insert the new battery again and press the ON button.

When disposing of the unit and/or batteries, be sure to adhere to current regulations.

FAULT INDICATION

FAULT OR FAULT SYMBOL	FAULT DESCRIPTION	CORRECTIVE MEASURE
No display on the LCD panel	The battery has run out. Incorrect battery polarity.	Replace the battery. Please note: The (+) side of the battery must face upwards.
Measurement not possible (or an abnormal value is displayed)	The thermometer is not ready.	Wait until the °C symbol is displayed.
An abnormal temperature value is displayed.	The probe tip is dirty or damaged. Did you hear the beep after pressing the ON button?	Clean the probe tip or get it repaired. Wait until you hear the beep before removing the thermometer from the ear or forehead.
LO or HI symbol is displayed	The temperature measured is outside the measuring range (0 °C -100 °C or 32 °F-212°F) Low: temperature too low High: temperature too high	Check that the probe tip is clean and that the thermometer is properly inserted into the ear or placed on the forehead.

symbol is displayed	The battery has run out.	Replace the battery.
 symbol is displayed	The thermometer is not yet ready for measuring. The ON button was not pressed at the right time.	Wait until the °C symbol is displayed on the panel. Then press the ON button as soon as you begin measuring.
 symbol is displayed	The ambient temperature is outside the operating temperature range or is changing too fast.	To ensure accurate measurement, let the thermometer rest at operating temperature for 20 minutes prior to use.

LIMITED WARRANTY

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This thermometer is guaranteed for 2 years from the date of purchase against any manufacturing defect, conditional upon normal household use. If your unit does not work owing to defective parts or assembly, we undertake to repair it without charge. Apart from the battery, all parts of the unit are subject to this warranty. Damage to the unit caused by improper use is not covered by this warranty. We recommend that the accuracy of the unit be checked annually by an authorised laboratory (in Germany this is compulsory). This checking procedure is not a service provided under the warranty. Use of the unit under operating conditions outside the range indicated may result in false readings.
The period of manufacture is indicated by the LOT number on the unit. The first two digits indicate the month and the third to sixth digits the year of manufacture.

Manufacturer:
Geratherm Medical AG
Fahrenheitstraße 1
D-98716 Geschwenda
Deutschland

CE 0118

CERTIFICATE OF GUARANTEE

Geratherm® guarantees the infra-red dual thermometer against any manufacturing defect for two years from the date of purchase if it is returned to the dealer from whom it was purchased. During this period the unit will be repaired or replaced free of charge if the fault is due to defective design or assembly.

This guarantee does not cover any damage or defect caused by improper handling resulting from use that is not in compliance with these instructions or from unauthorised attempts to repair it. Your local dealer cannot declare this manufacturer's guarantee invalid, but may expand it by additional guarantees at his discretion and at his own expense.

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Model No.: . . . . . .

Serial No.: . . . . . .

Date of purchase: . . . . . .

Dealer's signature: . . . . . .

Invoice No. / Receipt No.: . . . . . .

Name and address of dealer: . . . . . .

Manufacturer:
Geratherm Medical AG
Fahrenheitstraße 1
D-98716 Geschwenda
Deutschland

EAR AND FOREHEAD THERMOMETER

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